GNHWPCA
Protecting the Environment

Greater New Haven Water Pollution Control Authority
260 East Street New Haven, CT 06511
203.466.5280 p 203 772.1564 f www.gnhwpca.com

June 21, 2011

Mr. George V. Hicks
Sanitary Engineer
Municipal Facilities Section, Water Management Bureau
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Subject: GNHWPCA Long Term Control Plan Update

Dear Mr. Hicks:

As you know, the Authority has been working hard to move forward with several items necessary for water pollution control and combined sewer overflow elimination. Along the way we have been trying to improve communication with DEP. In our last meeting we reviewed a 5-year projection of our facility plan in keeping with the Long Term Control Plan (LTCP) and Consent Order WC 5509. We offer this letter in hopes to further clarify our intentions to meet the requirements of the Consent Order and also provide some further clarification on questions regarding private inflow as related to the LTCP (reference your email dated 4/11/11.)

As a condition of the Consent Order WC 5509 entered into between the State of Connecticut and the Greater New Haven Water Pollution Control Authority (GNHWPCA) on July 1, 2009, Article B5 of the Consent Order requires the Long Term CSO Control Plan (LTCP) to be updated (LTCP Update) within 3 months of approval by the CT Department of Environmental Protection (CTDEP) of both the Affordability Study and Facilities Plan. Future updates must be submitted at a maximum of 5 year intervals thereafter until the Consent Order is vacated.

The Facilities Plan received CTDEP approval on March 9, 2011; however, the Affordability Study is still under review. As indicated, the first update to the LTCP is due within 3 months of both the Facilities Plan and Affordability Study approval. In addition, it also requires submission of the scope for such update 3 months before the update is due. In anticipation of an Affordability Study approval in the near future we have prepared the following "outline" of the LTCP update for your review and comments.

Under the terms of the Consent Order GNHWPCA has committed to and will invest in the infrastructure necessary to eliminate all CSO's during a 2 year storm event. The LTCP Updates will be the mechanism through which new information and experience is used to determine the appropriate sequence and timing of strategies and efforts to achieve this result.

This outline is presented as a template for this and all future updates. As you will see, this first update is largely a reiteration of the Facilities Plan informed by the Affordability Study with a look ahead to the next 5 years. We believe that this is appropriate since no new data, information, monitoring or modeling has been obtained at this juncture. Other updates will likely have a different scope because such additional input will either be part of or available.

PROPOSED LTCP UPDATE OUTLINE:

A. **BACKGROUND**

B. **LTCP TIMELINE / MILESTONES**

C. **LTCP UPDATE**

1. **PROJECTS COMPLETED SINCE THE LAST UPDATE** *(FIRST UPDATE WILL INCLUDE PROJECTS SINCE THE APPROVED LTCP (2001)*
2. **UPDATED FACILITIES PLAN TABLE 2-3 WITH ADDITIONAL COLUMNS FOR NEW HYDRAULIC MODELING RESULTS** (*FIRST UPDATE WILL INCLUDE A NEW VERSION OF TABLE 2-3 OF THE FACILITIES PLAN)*

D. **HYDRAULIC MODEL UPDATE NARRATIVE** *(FIRST UPDATE WILL BE A REITERATION OF THE FACILITY PLAN SINCE MODELING WAS LAST COMPLETED 2008)*

TABLE/SPREADSHEET - MODELING ASSUMPTIONS FOR FUTURE PROJECTS WITH CURRENT YEAR CONSTRUCTION DOLLARS WITH PRIORITY SEQUENCE. *(NEW VERSION OF FACILITIES PLAN TABLE 2.4B)*

E. **PROPOSED 5-YEAR PROJECT IMPLEMENTATION SCHEDULE WITH CURRENT YEAR COSTS**

F. **ESTIMATED COMPLETION DATE OF THE LTCP BASED ON CHANGES IN FUNDING, LTCP SCOPE OR AFFORDABILITY VARIABLES.** *(FIRST UPDATE WILL SPEAK TO THE PROJECTIONS WITHIN THE APPROVED AFFORDABILITY STUDY)*

Please review this draft outline and provide comments so that we can insure that the final report is in a form that satisfies the requirements of the Consent Order as well as serving the GNHWPCA's planning needs.

Regarding your concern that there are inconsistencies between the approved 2011 Facilities Plan and the LTCP specific to 2 year CSO discharges and private inflow sources, we offer the following:

As you are aware, the Facilities Plan reinforced a major change in the 2008 approach which substantially increases the capacities of the Boulevard, East Street and Union pump stations and constructs wet weather improvements at the ESWPCF in order to treat a peak flow of 187 MGD (as opposed to the current peak flow of 115 MGD). The 5 MG Truman Tank was also constructed between 2001 and 2011. The above changes and improvements allowed the Authority to include within CH2MHill's 2008 Hydraulics Model the disconnection of roof leaders only in the Fair Haven area. In total this change did not increase the CSO storage tank volume and still meets the goal of no CSOs during a 2 year storm.

To be clear, the Authority has not changed its resolve to remove all CSOs during a two year design event as identified in the 2001 LTCP. We understand that the tables within the 2011 Facilities Plan may have created some confusion as it would appear that previously identified possible strategies were dropped from consideration without explanation; this response will attempt to address these concerns.

The enclosed Table 2-3 from the approved Facilities Plan shows 32.0 MG of CSO volume from a 2 year design event. Table 2-3 also summarizes the reduction in CSO storage tanks to just the locations of larger overflows (total of 6). The 6 locations (Table 2-3 highlighted in yellow) represent 27.9 MG of CSO storage. This reduces the estimated CSO volume to 4.1 MG in the 2 year design storm (a 92 percent reduction from the 2007 Existing Conditions). CSOs 027 *(0.1MG overflow)*, 031-S.Frontage /Davenport *(0.7MG overflow)* and 035-Woodward PS*(0.1MG overflow)* have already been closed. Completion of the Yale/Trumbull sewer separation project will result in the closure of CSO 014 *(1.0MG overflow.)* These improvements, which are referenced in the notes of Table 2-3, reduce the CSO volume during a 2 year storm to 2.2 MG. It is proposed that the remaining 2.2 MG of CSO volume would either be captured by a tank(s) or eliminated through separation type projects within each respective sewershed. The Facilities Plan approach, summarized in Table 2-4B, assumes that there will be better information at the time we visit each sewershed and

that cost benefit determination will then be made to reach the goal of zero overflows during a 2 year storm.

To further clarify our approach to addressing the remaining overflows (2.2 MG) we offer the following:

Ongoing Items:

- Continue Infiltration and Inflow, SSES and Sewer Rehabilitation Projects of the sanitary sewer systems in Hamden, East Haven, Woodbridge and New Haven to reduce peak wet weather flows. These projects have a major effect on the base flow which will ultimately be quantified in more detailed CSO monitoring within each sewershed.
- Maintain land use development requirements which dictate separation and retention of the 2-year design storm in combined sewer areas. For commercial properties these requirements have been found to have a great impact on reduction of private stormwater inflow. We have attached for ease of reference the our Low Impact Development requirements which have been in effect since 2008 within our Permitting and Design Criteria Manual

Continue Sewer Separation:

- Complete sewer separation in accordance with modeling assumptions in Table 2-4B for each specific sewershed. Note that separation of public and private inflow sources is only called out within the Fair Haven sewershed whereas all other sewersheds were modeled as separation of public inflow sources only.
- After separation is completed within each sewershed we will perform flow monitoring to quantify the remaining 2 year CSOs (if any).
- If CSOs still exist, we will determine the most cost effective solution to remove the CSO discharge during the 2 year event. This determination should be lead with a thorough inspection and evaluation of the collection system to determine the source of inflow. Projects may include further removal of cross connections, further separation of isolated catch basins left in the combined system and/or upstream I&I removal. The evaluation may also include a comparative analysis of tank installation vs. separation of private inflow sources as deemed cost effective.

We believe that this approach is consistent with both the approved 2001 CSO LTCP and the 2011 Facilities Plan.

Please note that under separate cover we will be responding to the three follow-up issues identified by Ms. Wingfield necessary to address funding calculations which are in turn necessary to finalize the Affordability study. If you have any questions or would like to discuss any of these materials, please contact me.

Sincerely,

Greater New Haven Water Pollution Control Authority

Thomas V. Sgrol, P.E.
Director of Engineering

cc: Sid Holbrook, Executive Director
Gabe Varca, Director of Finance and Administration
Gary Zrelak, Director of Operations
Betsey Wingfield, Bureau Chief, DEP Bureau of Water Protection and Land Reuse
Ivonne Grajko-Hall, Sanitary Engineer, DEP Water Management Bureau

Enc.

The implementation of the strategy defined in the LTCP as "maximizing the conveyance for treatment" will further reduce CSO by approximately an additional 30 percent and reduce the number of storage tanks from 17 to 6. The maximum conveyance to the East Shore WPAF as a result of implementing this LTCP strategy is 187 million gallons per day (mgd) during a 2-year, 6 hour duration design storm event. The increased conveyance will be achieved by upgrades to East Street, Boulevard and the Union Street pump stations. Table 2-3 summarizes the CSO reductions under the LTCP, including the implementation of increased wet weather pumping to the East Shore WPAF.

TABLE 2-3

CSO Volumes and Duration from 2-Year Storm Under Differing Sewer System Conditions

CSO #	Location	1997 Existing Conditions	2007 Existing Conditions		2009 LTCP Scenario of max. pumping to the WPAF	
	Target/Existing Flows (mgd) to WPAF		115		187	
West River		Volume million gallons (mg)	Volume (mg)	Duration (Hours)	Vol. (mg)	Duration (Hours)
006	Whalley Ave. @ Fitch St.	4.6	5.1	6.5	6.1	5.8
005	E.T. Grasso Blvd. @ Derby Ave.	5	4.8	6.5	4.6	6.5
004	E.T. Grasso Blvd. @ Legion Ave.	6.1	6.1	8.0	5.7	7.5
003	E.T. Grasso Blvd. @ Orange Ave.	4.3	3.1	5.8	3.0	5.5
002	E.T. Grasso Blvd. @ Lamberton St.	1.1	closed		closed	
	TOTAL	21.1	19.1		19.4	
Beaver Ponds						
008	Munson St. @ Orchard St.	0.2	0.2	1.8	0.1	1.5
	TOTAL	0.2	0.2		0.1	
Mill River						
013	Everit St. @ East Rock Rd.	0.8	0.1	1.3	closed	
NA	Cross connection @ 013	0	closed		closed	
012	Mitchell Dr. , east of Nicoll St.	2.7	1.5	4.3	1.5	4.5
NA	Mitchell Pump Station	0	0.0	0.0	0.0	0.0
010	East St. @ I-91 (2 weirs) (upstream)	0.7	0.3	2.3	0.3	2.3
010	East St. @ I-91 (2 weirs) (downstream)	0.7	0.6	3.3	0.5	3.0
011	Humphrey St. @ I-91	9.9	7.4	4.8	6.9	4.3
014	Trumbull St. @ Orange St.	0.9	1.0	2.3	1.0	2.3
NA	Humphrey Pump Station	0.1	0.0	0.0	0.0	1.3
009	Grand Ave. @ James St.	2.8	2.5	4.8	closed	
027	East/Ives	0.7	0.5	3.8	0.1	1.8
	TOTAL	19.3	14.0		10.4	
Quinnipiac River						
NA	Barnes Pump Station	0.3	closed		closed	
NA	Quinnipiac Pump Station	*	closed		closed	
018	Lombard St. @ North Front St.	1.7	closed		closed	

TABLE 2-3
CSO Volumes and Duration from 2-Year Storm Under Differing Sewer System Conditions

CSO #	Location	1997 Existing Conditions	2007 Existing Conditions		2009 LTCP Scenario of max. pumping to the WPAF	
	Target/Existing Flows (mgd) to WPAF		115		187	
019	Pine St. @ North Front St.	1.5	1.3	4.0	closed	
020	Quinnipiac Ave. @ Clifton St.	0.2	0.6	8.0	0.0	0.0
016	Poplar St. @ River St.	1.7	3.8	5.8	closed	
015	James St. Siphon	4.6	1.7	3.8	closed	
	TOTAL	10	7.5		0.0	
New Haven Harbor						
NA	S. Frontage/Davenport	*	0.9	2.8	0.7	2.0
NA	Portsea/Liberty	*	0.0	0.0	closed	
NA	Carlisle/Liberty	*	0.0	0.0	closed	
021	East St. Pump Station	5.4	5.0	5.5	0.2	4.3
025	Union Pump Station	4.2	2.5	3.3	0.2	1.0
NA	George/Temple	1	0.9	2.3	0.8	2.3
022	Allen Place	*	closed		closed	
024	Boulevard Pump Station	3.5	0.6	4.8	0.0	0.0
NA	Woodward Pump Station	0.1	0.1	2.5	0.1	2.5
	TOTAL	14.2	10.0		2.0	
	GRAND TOTAL (mg)	64.8	50.7		32.0	
	Storage Volume	59.1	44.8		27.9	
	Number of Proposed Tanks	17	12		6	

Yellow Highlight - Proposed Tank
Orange Highlight - Proposed Tank Eliminated

1. Conveyance through the Boulevard Interceptor is limited and although CSO flow reduction at 002, 003, 004 and 005 has been achieved by the proposed increasing pumping capacity at the Boulevard PS, outfall 006 is adversely influenced by backwater in the interceptor. Modeling refinements have also resulted in slight changes in flow values.
2. CSO-014 is anticipated to be closed in 2012 after the Yale Campus Trumbull St Sewer Separation Project
3. CSO East/Ives (CSO 027) is reported as closed per the GNHWPCA NPDES Status September 2008
4. CSO Woodward Pump Station (CSO 035) is reported closed in the GNHWPCA NPDES Status September 2008.

The elements of the Long Term Control Plan and the Short Term Measures that have been implemented are tabulated in the 2008 report titled Hydraulic Model Update. These tables have been reproduced in this section of the Facilities Plan as Tables 2-4A and 2-4B.

The implementation of some short term measures has impacted elements of the LTCP by either reducing them in scope or eliminating them. In other cases projects have been executed that were not initially envisioned as part of the LTCP but found to be necessary to reduce CSO's. Tables 2-4A and 2-4B will form the basis for future updates to the LTCP and reporting requirements under the consent decree.